| SIX FLAGS NEW ENGLAND | |
|---|---|
| SUBJECT: LOCKOUT/TAGOUT PROCEDURE | SAFETY REFERENCE MANUAL |
| SECTION: 24 | |
| EFFECTIVE: January 2016 | SUPERSEDES: ALL PREVIOUS |
| CFR #: 29 CFR **1910.147** – *Subpart J* and **1926.417** - *Subpart K* | |

## 24.1 PURPOSE

To establish a procedure which will protect employees and contractors of SIX FLAGS NEW ENGLAND from inadvertent operation of mechanical equipment, energizing of electrical circuits, and release of pressurized or chemical fluids, while performing work on, or in the immediate vicinity of, motor-driven, electrical, or pressurized equipment.

## 24.2 GENERAL

SIX FLAGS NEW ENGLAND employees and contractors shall not work on or in equipment, vessels, etc., which are not in a "zero energy state." Modern industrial processes and equipment expose employees to a variety of energy sources that can be hazardous. These sources include, but are not limited to, electrical circuits, hydraulic systems, pneumatic systems, and the forces of gravity. An unexpected or sudden release of any of these energy sources can expose employees to moving equipment, electrical shock, burns, or hazardous materials. For proper employee protection, exposure to all power sources and/or hazardous materials must be positively eliminated.

## 24.3 RESPONSIBILITY

While it is the responsibility of SIX FLAGS NEW ENGLAND to provide this policy and to comply with the various provisions of the federal/state/local regulations. The ultimate responsibility to recognize and secure all hazardous energy sources lies within each employee who might be required to apply or abide with the provisions of this policy. All of SIX FLAGS NEW ENGLAND employees have the responsibility to immediately report all unsafe conditions to their supervisors.

A. It is the responsibility of each department to document that every employee who is authorized to operate or repair equipment has been trained in proper lockout procedures. It is further the responsibility of each department to ensure that these employees have been issued an identification tag, lock and key, or that tags, locks and keys are readily available.

B. Tags, locks and keys will be issued by the Safety Department. The Safety Department will maintain a master list of lock and key numbers for every lock issued. This list will be published, as well as revised, for the Security, Operations, Retail and Maintenance Departments. These locks will be identified by departmental color coding as follows:

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| | |
|---|---|
| Safety | Red |
| Communication | Gold |
| Operations | Orange |
| Carpentry/Plumbing | Blue |
| Mechanics/ Paint shop/Sign | Purple |
| Landscape/LP | Brown |
| Electrical | Gold |
| Overnight | Black |

C. The Maintenance Department shall identify and label each energy isolating device for each piece of equipment that could pose a hazard if unexpectedly energized. Devices that are connected to an electrical power source by cord and plug are not required to be locked out. However, this equipment should be disconnected from its source and a caution tag shall be placed on the end of the plug. The cord should be kept under the control and in the sight of the person servicing the equipment. Once this equipment is disconnected it should be tested for residual or stored energy.

## 24.4 POLICY

Any SIX FLAGS NEW ENGLAND employee and/or contractors who are required to work in or around rides or any energized equipment must carry and use a lockout device when performing any maintenance, inspection, and/or cleaning and adjusting of equipment.

## 24.5 DEFINITIONS

ZERO ENERGY STATE – The state of equipment in which every power source that can produce movement of a part of the equipment, or the release of energy, has been rendered inactive.

AFFECTED EMPLOYEE – An employee whose job requires him/her to operate or use a machine or equipment on which service or maintenance is being performed under lockout/tagout or whose job requires him/her to work in an area where such work is being performed.

AUTHORIZED EMPLOYEE – An employee who locks out or tags out machines or equipment in order to perform servicing or maintenance on the equipment or machine.

ENERGY ISOLATING DEVICE – A mechanical device that physically prevents that transmission or release of energy, including but not limited to, the following: a manually-operated electrical circuit breaker; a disconnect switch; a manually-operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches, and other control devices are not energy isolating devices.

LOCKOUT- A physical barrier and technique designed to isolate energy and prevent accidental restart.

TAGOUT – A prominent warning device and tag which is securely fastened to an energy isolating device (Lockout) and equipment in accordance with established procedures to indicate that the equipment being controlled may not be operated until the lockout/tagout device is removed. The tagout can be used in conjunction with the Lockout but never alone.

ENERGIZED - Connected to an energy source or containing residual or stored energy.

LOCK-OUT POINT - Location of an energy isolating device.

## 24.6 LOCKOUT/TAGOUT PROCEDURES

The following procedure must be followed when working on any energized equipment:

A. **Notify Employees** - Notify all affected employees.

B. Locate the Lockout Point

C. Inform all affected employees of Lockout

D. After Lockout technique has been performed but before activity commences, verify that all hazardous energy has been isolated and or released

As people complete their work on the equipment, they must remove their lockout/tagout device. At shift change, all employees that are leaving must remove their lockout/tagout device, and the oncoming shift shall place their device on the equipment. An exception is if there is only one shift working on the equipment and the equipment cannot be operated while the crew is still working on it.

Equipment cannot be operated until all locks have been removed. If testing must be done while a lockout is in place, the following steps must be taken:

1. Notify all Affected employees of intended Lockout removal.

2. Clear the area of all tools and equipment.

3. Remove all employees and contractors from the area.

4. Remove lockout/tagout devices.

5. Notify all affected employees that the lockout has been removed

6. Energize and proceed with testing.

7. De-energize all systems and reapply lockout/tagout devices.

D. If an employee or contractor has left his/her lock or tag on a piece of equipment, every effort must be made to contact this person, and VERIFY his/her location. This contact can occur in person or via telephone - BUT MUST BE DONE! If contact cannot be made, a full inspection of the equipment and the area must be made and documented.

The removal of a lockout device by any other person than the employee or contractor that applied the device must be approved by the Maintenance Manager, Maintenance M.O.D., or the Director of Maintenance, who must Notify the Safety Manager in writing after completing the above inspection of the affected area.

The employee or contractor whose lockout/tagout device was removed must be informed of his/her lock/tag being removed before resuming work.

E. Notify Supervisor - The person responsible for the equipment and or process be notified that the work has been completed and all lockout devices have been cleared.

F. If a worker must leave the work site before the work is complete and intends to continue the work later the same day, the worker's lock should be left on the equipment's energy isolating device.

## 24.7 LOCKS AND KEYS

A. Tags and locks will be issued by the Safety Department.
Safety will provide all authorized and affected employees with lockout/tagout devices. They are specifically identified as such and shall be used for that purpose only. Associates will receive a lockout and a tag with their name, radio channel number, and unit number on it. These must be used on all SIX FLAGS NEW ENGLAND lockouts.

A master list and key information will be maintained by the Safety Department, so that each device can be identified and removed should it be necessary following the lock out tag out policy. This information will be in The Safety Office with limited access. ALL Keys are distributed to the Employee. SFNE shall not keep 2nd key all keys shall be given to Employee

B. The lock will include an identifying personal danger tag, and the employee will be issued the only key for the lock.

C. The lock and/or key are not transferable, and the lock is to be attached and removed only by the person to whom it is issued.

D. Use of the lock for purposes other than lockout or use by someone other than the employee who was issued the lock, is prohibited.

E. If any person is in an area of equipment requiring lockout, his/her lock and tag must be properly attached.

F. If a key to a lock seems to be lost beyond recovery, the person to whom the lock was assigned shall notify his supervisor. The supervisor should send the individual with the lock to the Safety Department for a replacement lock and key.

## 24.8 TRAINING

All authorized and affected employees will complete yearly training, including:

-Authorized Employees - Recognition of hazardous energy sources; type and magnitude of energy available; methods necessary for energy isolation and control; tagout systems and limitations.
-Affected Employees - Purpose and use of the lockout/tagout procedure; prohibition of attempting to restart locked out equipment.

Retraining may occur more frequently than yearly if any of the following occurs:

-change in employee's job assignment
-a new hazard is introduced due to a change in machines, rides, equipment, or process
-a change in the Lockout/Tagout Procedure

-a periodic inspection reveals inadequacies in the Lockout/Tagout Procedures or in the knowledge of employees

Authorized employee training will be documented and kept up-to-date by the Safety Department. Training of affected employees will be documented by their departments.

## 24.9 INSPECTIONS

In accordance with CFR 1910.147(c) (6) the employer shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed. The periodic inspection shall be performed by an authorized employee other than the one(s) utilizing the energy control being inspected. The periodic inspection shall be conducted to correct any deviations or inadequacies identified. Where Lock out is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

The employer shall certify that periodic inspections have been performed. (See Appendix C). The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

## 24.10 DISCIPLINE

Any employee of SIX FLAGS NEW ENGLAND who is found to be in violation of this policy shall be determined to have committed a serious safety violation and shall be disciplined as such by his/her department management.

# APPENDIX B
# ELECTRICAL SAFETY GUIDELINES

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Safety related work practices shall be employed to prevent electrical shock or other injuries resulting from either direct or indirect electrical contact, when work is performed near or on equipment or circuits which are or may be energized. The specific safety related work practices shall be consistent with the nature and extent of the associated electrical hazards.

Live parts to which an employee may be exposed shall be de-energized before the employee works on or near them, unless the employer can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

If the exposed live parts are not de-energized, other safety related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts.

Conductors and parts of electrical equipment that have been de-energized but have not been locked or tagged out shall be treated as energized parts.

De-energized circuits shall be locked out as directed in lockout procedures. Safe procedures for de-energizing shall be determined before circuits are de-energized.

The circuits and equipment to be worked on shall be disconnected from all electric energy sources, control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

Stored electric energy which might endanger personnel shall be released. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded if the stored electric energy might endanger personnel.

Stored non-electrical energy in devices that could re-energize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

A lock and a tag shall be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed. The lock shall be attached so as to require the use

of undue force or tools to operate the disconnecting means.

If tag out only is used, at least one additional safety measure shall be taken that provides as much protection as a lock.

Verification must be made before a circuit can be considered de-energized. A qualified operator shall attempt to operate the equipment at the direction of the person applying the lockout thus verifying the inability to restart. Another test to use shall be for a trained person to use test equipment which will indicate de-energization. All possible routes for energy transmission shall be so checked. For 600 volt or more circuits, testing equipment shall be checked immediately before and after the test to ensure proper working order.

Before re-energizing equipment, a qualified person shall inspect the equipment for readiness and shall ensure all employees are clear and notified for restart or test. Lock out procedures shall be followed in removing locks.

WORKING ON OR NEAR EXPOSED ENERGIZED ELECTRIC PARTS

Only qualified persons may work on electric circuit parts or equipment that have not been de-energized. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials and insulated tools.

If work is to be performed near overhead lines, the lines shall be de-energized and grounded, or other protective measures shall be provided before work is started. If the lines are to be de-energized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to de-energized and ground them. If protective measures, such as guarding, isolating, or insulating are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

When an unqualified person is working on the ground or in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following:

For voltages to ground 50KV or below -- 10 feet
For voltages to ground over 50 KV -- 10 feet, plus 4 inches for every 10KV over 50KV

When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground. the person may not approach or take any conductive object without an

approach insulating handle closer to exposed energized parts than shown in the table below.

| Voltage Range ( phase to phase) | Minimum Approach Distance |
|---|---|
| 300V and less | Avoid contact |
| Over 300V, not over 750V | 1 foot |
| Over 750V, not over 2KV | 1 foot, 6 inches |
| Over 2KV, not over 5KV | 2 feet |
| Over 5KV, not over 37KV | 3 feet |
| Over 37KV, not over 87.5KV | 3 feet, 6 inches |
| Over 875KV, not over 121KV | 4 feet |
| Over 121KV, not over 140KV | 4 feet, 6 inches |

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet is maintained. If the voltage is higher than 50KV, the clearance shall be increased 4 inches for every 10KV over that voltage.

During transit with structure lowered, 4 feet clearance is required plus 4 inches for every 10KV over 50KV.

If insulating barriers are installed to prevent contact with the liens, and if the barriers are rated for the voltage of the line being guarded and are not a part or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.

If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance may be reduced to the distance listed above.

Employees standing on the ground shall not contact the vehicle or mechanical equipment or any of its attachments unless the employee is using protective gear rated for the voltage or the equipment is located so that no insulated part of its structure can come closer than allowed for non-insulated equipment.

For vehicles working near energized lines using grounding cables, no employee shall stand or walk near the grounding location. Barriers to the grounding location shall be used.

Employees shall not enter areas to work on energized equipment unless the area is illuminated adequately for them to work safely. Employees shall not reach blindly into areas where energized parts may be.

Protective devices, (shields, insulating materials) shall be used when employees must work on

energized parts in confined spaces.

Doors shall be blocked open so as to not pose a hazard to an employee working on energized parts.

If employees must use conductive materials in areas where contact is possible with energized parts, safe work practices shall be discussed, such as wearing insulated gloves, etc. rated to protect against possible hazards in the area.

Portable ladders shall be nonconductive if used where contact with energized parts is possible.

Personal items such as rings or watches which are conductive shall not be worn when working on energized parts. Insulating materials may be worn over such items where possible as long as no other hazard is created.

Housekeeping in areas where energized equipment is located shall be done only by authorized persons who are knowledgeable of the hazards and how to safely clean. Use of conductive cleaning materials shall be limited.

Only a qualified person shall defeat an interlock while working on equipment. The interlock shall be returned to operable condition upon completion.

## USE OF PORTABLE EQUIPMENT

Portable equipment shall be used in a manner that will not cause damage. Equipment shall not be picked up by its cord. Flexible cords shall not be stapled or hung up in a fashion that will damage the cords insulation

All equipment shall be visually inspected before use for defects. If any defects are found, the equipment shall be tagged out of service until repaired and tested to ensure proper operation.

No plugs shall be altered in any way to alter the current carrying prongs. All equipment shall be grounded as required by design.

Equipment and cords used in conductive work areas shall be designed and approved for this use. Employees shall not work with electrical equipment while wet or in wet conditions. This includes plugging in or unplugging cords, etc., that are energized.

Locking type connectors when used shall be locked.

Load rated switches, circuit breakers, or other devices specifically designed as disconnecting

means shall be used for the opening, reversing, or closing of circuits under load conditions. Cable connectors not of the load-break type, fuses, terminal lugs, and cable splice connections may not be used for such purposes, except in an emergency.

After a circuit is de-energized by a circuit protective device, the circuit may not be manually re-energized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual re-closing of circuit breakers or re-energizing circuits through replaced fuses is prohibited.

Over-current protection of circuits and conductors may not be modified, even on a temporary basis.

Only qualified persons may perform testing work on electrical circuits or equipment.

All testing equipment shall be inspected prior to use for defects or damage.

Equipment shall only be used as rated and designed.

Where flammable materials are even occasionally used, no electrical equipment capable of igniting them shall be used.

Employees working in areas where there are potential electrical hazards shall be provided with, and shall use, electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed. Proper care and testing of this equipment shall be done.

Head protection shall be worn to protect against falling wire or energized parts.

Eye protection shall be worn to protect from arcs, or debris.

Insulated tools, as well as gloves, shall be used. Protective equipment shall be protected from unnecessary damage.

Energized fuses shall be removed with insulated pullers.

Shields or barriers shall be provided when needed.

Safety signs, tags, barricades, or attendants shall warn of electrical hazards. More than one or all may be used together to ensure safety.

## APPENDIX C
## ENERGY CONTROL PROCEDURE CERTIFICATION

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## PERIODIC ENGERGY CONTROL PROCEDURE CERTIFICATION

THIS FORM IS TO BE USED TO CONDUCT AND DOCUMENT PERIODIC INSPECTIONS OF EQUIPMENT - SPECIFIC ENERGY CONTROL PROCEDURES. IN THE SPACE BELOW, RECORD THE PROCEDURE AND THE EQUIPMENT DESCRIPTION

PROCEDURE_____

EQUIPMENT/MACHINE/RIDE_____

EQUIPMENT /MACHINE/RIDE LOCATION_____

POLICY/PROCEDURE REVIEWED BY/ DATE_____

AUTHORIZED EMPLOYEE(S) OBSERVED (IF NECESSARY ATTACH ADITIONAL SHEET)

| EMPLOYEE NAME(PRINT) | EMPLOYEE SIGNATURE |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

REVIEW THE CURRENT LOCKOUT/TAGOUT PROCEDURE AND INDICATE WHETHER PROCEDURES ARE SATISFACTORY. ANY ITEM MARKED **NO** MUST BE EXPLAINED (USE THE BACK OF THE INSPECTION FORM TO RECORD EXPLANATIONS).

| | SATISFACTORY? |
|---|---|
| 1. HAS THE EQUIPMENT SPECIFIC PROCEDURE BEEN REVIEWED WITHIN THE PAST 12 MONTHS? | _____YES<br>_____NO |
| 2. WERE AFFECTED EMPLOYEES INFORMED BY THE AUTHORIZED EMPLOYEE PRIOR TO INITIATING SERVICE/MAINTENANCE? | _____YES<br>_____NO |
| 3. EQUIPMENT SHUTDOWN? | _____YES<br>_____NO |
| 4. EQUIPMENT ISOLATED FOLLOWING WRITTEN PROCEDURE? | _____YES<br>_____NO |
| 5. EQUIPMENT LOCKED/TAGGED OUT (TAG PROPERLY FILLED OUT)? | _____YES<br>_____NO |
| 6. ALL ENGERGY BLED OFF OR REDUCED TO ZERO ENGERGY STATE? | _____YES<br>_____NO |
| 7. ISOLATION AND DE-ENERGIZATION VERIFIED? | _____YES<br>_____NO |

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8. OPERATING CONTROLS RETURNED TO NEUTRAL OR OFF POSITION (IF APPLICABLE)? _____YES _____NO

9. EQUIPMENT AREA CHECKED PRIOR TO REMOVING LOCKS/TAGS?

NON -ESSENTIAL ITEMS REMOVED

COMPONENTS OPERATIONALLY INTACT

GUARDS OR OTHER PROTECTIVE FEATURES RESTORED

AREA CLEAR O NON-ESSENTIAL PERSONNEL

_____YES

CONTROLS IN NEUTRAL OR OFF POSITION _____NO

_____YES

10. ALL AFFECTED EMPLOYEES NOTIFIED THAT WORK HAS BEEN COMPLETED? _____NO

_____YES

11. OTHER? _____NO

## CERTIFICATION:

THIS ENERGY CONTROL PROCEDURE IS ADEQUATE (OR MODIFIED AS NOTED ABOVE). THE INSPECTOR HAS REVIEWED APPROPRIATE RESPONSIBILITIES WITH THE AUTHORIZED EMPLOYEE(S). TAG LIMITATIONS WERE INSPECTED AND APPROPRIATE AFFECTED EMPLOYEES INCLUDED IN THIS REVIEW WHERE LOCKOUT/TAGOUT DEVICES ARE USED.

INSPECTOR'S SIGNATURE_____DATE_____

AUTHORIZED EMPLOYEE'S SIGNATURE_____

DATE_____